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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,070	07/14/2003	Nikolay Glushnev	GB920020068US1	6964

23550 7590 04/25/2008

HOFFMAN WARNICK & D'ALESSANDRO, LLC
75 STATE STREET
14TH FLOOR
ALBANY, NY 12207

EXAMINER	
WOZNIAK, JAMES S	

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
04/25/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com

Office Action Summary	Application No.	Applicant(s)	
	10/619,070	GLUSHNEV ET AL.	
	Examiner	Art Unit	
	JAMES S. WOZNIAK	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 August 2007* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the office action from 10/30/2007, the applicant has submitted an amendment, filed 1/30/2008, amending independent claims 1, 5, and 9, while arguing to traverse the art rejection based on the limitation regarding "a cut and paste code that indicates how many characters should be cut from the end of a surface form of a word and pasted to produce a particular variation, extended by a gloss code that indicates whether at least part of the orthographic variation should be converted between upper and lower case" (Amendment, Pages 10-11). The applicant's arguments have been fully considered but are moot with respect to the new grounds of rejection further in view of Beesley et al *("Draft: Finite-State Morphology: Xerox Tool and Techniques," 1999)*.

2. Although the applicant has added a reference to the drawings in the brief description of the drawings (*Amendment, Page 14)*, Figs. 2-3 are not referenced in the detailed description, thus, the previous drawing objection is maintained.

3. In response to the amendment of claims 1 and 9 *(Amendment, Page 10)*, the examiner has withdrawn the previous 35 U.S.C. 112, second paragraph rejection.

4. In response to amended claim 1 *(Amendment, Page 10)*, the examiner has withdrawn the previous 35 U.S.C. 101 rejection directed towards claims 1-4.

5. Although the applicant has amended claim 9 to include a step for producing a "useful, concrete, and tangible result", the computer program is still not encoded/stored on a computer readable medium, thus not making a connection between hardware and software and failing to realize its practical application functionality. For this reason, claim 9 and its dependents remain rejected under 35 U.S.C. 101.

6. Although the applicant has amended claim 5 to a include a "computer", this claim still does not generate or transform any type of data to produce a orthographic variation *(such as a means corresponding to the generation steps of claims 1 and 9)* or a "useful, concrete, and tangible result". As such, claim 5 is directed to non-statutory subject matter and remains rejected under 35 U.S.C. 101.

Drawings

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following figure(s) not described in the detailed description: 2 and 3. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the figure(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet

should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. **Claims 5-12** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 5 is drawn to an abstract dictionary data structure stored in a computer. In order for a claimed invention to be considered statutory under 35 U.S.C. 101, it must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result" *(State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02)*. In the present case, claim 5 only represents a computer abstract dictionary data structure, which does not actively generate any type of result. As such, claim 5 and its dependents are directed to non-statutory subject matter.

Claim 9 is drawn to a "program product" *per se* as recited in the preamble not stored or encoded on a computer readable medium and as such is non-statutory subject matter *(i.e.,*

"computer program product on a computer readable medium" instead of –computer readable medium encoded with a computer program product--). See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a *claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory*. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Dependent claims 10-12 fail to overcome the 35 U.S.C. 101 rejection applied to claim 9, and thus, are also directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 1, 3, 5, 7, 9, 11, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al *(U.S. Patent: 5,594,641)* in view of Beesley et al *("Draft: Finite-State Morphology: Xerox Tool and Techniques," 1999)*.

With respect to **Claims 1 and 5**, Kaplan discloses:

Obtaining orthographic variations of dictionary words *(receiving word stems and variations, Col. 4, Lines 19-39)*;

Explicitly storing substantially all orthographic variations of words in a finite state transducer database *(word stems and all variations stored in a finite state transducer database, Col. 4, Line 19- Col. 5, Line 5)*;

Generating and Storing, for each of the orthographic variations, a cut and paste code, which indicates how many character should be cut from the end of a surface form of a word and pasted to produce a particular variation *(stored coded mapping of variation rules merged into a lexical transducer and readable by a computer, wherein variations are cut and pasted onto a stem form, Col. 4, Line 19- Col. 5, Line 5 and Col. 8, Line 59- Col. 9, Line 6; and Fig. 10-11a.; further tag codes that are indicative of a change in case between a stem and variant form, Col. 4,*

Line 40- Col. 5, Line 5; and example of case variation in a FST, Col. 7, Line 56- Col. 8, Line 13).

Although Kaplan discloses cut and paste tag codes for word variations and further notes that multiple rules can be added together (Col. 5, Line 65- Col. 6, Line 10), Kaplan does not explicitly disclose a further code that indicates whether at least part of the orthographic variation should be converted between upper and lower case, however, Beesley recites such a orthographic variation rule *(Pages 23-24; Figures 1.28-1.29).*

Kaplan and Beesley are analogous art because they are from a similar field of endeavor in linguistic analysis. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kaplan with the lower/upper case conversion rule in order to further encode other important word variants for text indexing and retrieval *(Kaplan, Col. 4, Lines 11-18 and 51-64).*

With respect to **Claims 3, 7, and 11**, Kaplan discloses the tag code indicative of a change of case of any letter in a word sequence as applied to claim 1, thus it would be inherent within the scope of the teachings of Kaplan that a tag code would indicate the conversion of a first character to lower or upper case, especially in determining a relation between a dictionary term and a capitalized first word in a query sentence when the created dictionary is utilized in an information retrieval system *(Col. 9, Lines 19-53).*

With respect to **Claim 9**, Kaplan discloses the method for producing a lexical transducer as applied to claim 1 as implemented as a program stored on a computer readable medium *(Col. 7, Lines 46-55).*

With respect to **Claim 13**, Kaplan shows a single orthographic variation segment indicating a plurality of root words *(Fig. 11A.)*.

12. **Claims 2, 6, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al in view of Beesley et al and further in view of Lee et al *(U.S. Patent: 4,939,639)*.

With respect to **Claims 2, 6, and 10**, Kaplan in view of Beesley discloses the method for generating a lexical transducer as applied to Claim 1. Kaplan in view of Beesley does not specifically suggest form variation between single and double character sequences, however Lee recites a linguistic dictionary that indicates corresponding single and double character sequences *(Col. 10, Line 55- Col. 11, Line 6)*.

Kaplan, Beesley, and Lee are analogous art because they are from a similar field of endeavor in linguistic dictionary processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kaplan in view of Beesley with the correlation of related single and double character sequences taught by Lee in order to provide a means for transliteration for characters that do not appear in a user's language *(Lee, Col. 10, Lines 43-54)*.

13. **Claims 4, 8, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al in view of Beesley et al and further in view of Schabes et al *(U.S. Patent: 6,424,983)*.

With respect to **Claims 4, 8, and 12**, Kaplan in view of Beesley discloses the method for generating a lexical transducer as applied to Claim 1. Kaplan in view of Beesley does not specifically suggest storing composite word forms having unaccented characters and storing

expanded word forms having the base letter form and an accent mark, however Schabes discloses a lexicon utilizing a finite state machine that associates words without accents (composite form) with alternative word forms having the base letters and accent marks (expanded form) *(Col. 21, Line 66- Col. 22, Line 30)*.

Kaplan, Beesley, and Schabes are analogous art because they are from a similar field of endeavor in linguistic dictionary processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Kaplan in view of Beesley with the concept of incorporating accent data into a lexicon as taught by Schabes in order to enable dictionary use in a non-English language context *(Schabes, Col. 22, Lines 17-21)*.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See PTO-892.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James S. Wozniak/
James S. Wozniak
Examiner, Art Unit 2626
4/2/2008